

Abstract Submitted  
for the SHOCK09 Meeting of  
The American Physical Society

**Accuracy of front Propagation speed determination** MEIR WERDIGER, LIOR PERELMUTTER, SHLOMI PISTINNER, Electromagnetic propulsion Division, Soreq NRC, Yavne 81800, Israel — The utilization of front propagation velocity in bulk material to infer physical quantities at an arbitrary pressure is a widespread technique. Here we analyze the accuracy of inferring front propagation velocity from front arrival time at an arbitrary predetermined location in space. Thus we attempt to find out the optimum locations at which front arrival time should be measured. We generalize existing techniques previously used for front propagation determination, and formulate the general optimization problem. This generalization is used to demonstrate that any front velocity  $u_w \hat{z}$ , such that the front arrival time to an arbitrary location in space can be written in the following functional form:  $t = \sum_i A_i g(x, y, z/u_w)$ , allows a predetermination of the accuracy by which  $u_w$  can be obtained. Furthermore, it allows the analytical optimization of the locations at which the arrival time should be measured.

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Date submitted: 13 May 2009

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